
M2317 telephones

This chapter provides feature and specification information for the M2317 telephone.

Functional description

This section provides feature and software requirement information for the M2317.

General features

The M2317 telephone has the following general features:

- A built-in, two-line (40 characters per line) Liquid Crystal Display (LCD) screen and integrated Handsfree.
- A telephone line cord and the handset cord equipped with standard modular connectors at each end, which permits quick replacement when required.

Figure 16 shows the M2317 telephone.

Physical characteristics

The M2317 telephone has the following physical characteristics.

Housing

The housing of the M2317 digital telephone consists of a molded plastic base and faceplate. The display module and the main circuit board are fastened to the underside of the faceplate. The Asynchronous Data Option (ADO) circuit board, if equipped, is mounted inside the base.

Figure 16
M2317 telephone



Keys

The M2317 telephone is equipped with 17 feature keys (see Figure 17) which are arranged as follows:

Fixed keys There are four keys to which a fixed function is assigned. They consist of the following:

- 1 Release key
- 1 Hold key
- 1 Volume control key (with 2 toggle positions)
- 1 Handsfree/Mute key (with associated LCD indicator)

Feature keys There are 11 programmable line/feature keys on the telephone faceplate. Each has an associated LCD indicator. Lines and features are assigned to these keys by service changes in the system software. A maximum of ten voice Directory Numbers and specific features such as, Auto Answerback, Call Waiting, Dial Intercom, and Display can be assigned.

Alphanumeric display screen and softkeys

The M2317 telephone is equipped with a two-line (40 characters per line capacity) Liquid Crystal Display (LCD) screen and five LCD-labeled softkeys located immediately beneath the display screen.

The 155 x 15 mm (6 x 0.6 in) LCD screen has a capacity of 80 characters (two lines of 40 characters each). The first line displays date and time during the idle state, incoming call identification, feature icons, user prompts, and messages, whereas the second line displays the labels for the softkeys (seven characters per key).

There are five softkeys, which are counted one to five from left to right. The fifth softkey ("more...") is used to scroll to a second layer feature menu whenever there are more softkey-assigned features available for the active telephone state. Pressing the "more..." key will bring up the labels for the remaining functions. Softkey label positions on the display screen are fixed by the M2317 telephone firmware and cannot be changed by the user.

Each softkey has a seven-character-wide label on the display immediately above the key. The labels change as the available features change. For example, a softkey could access one feature in the idle state and a different feature in the active state.

Handsfree key When Handsfree is on, you can talk to another party without lifting the handset. Handsfree can be activated by pressing the Handsfree/Mute key, or by pressing a DN key without lifting the handset. The Handsfree/Mute LCD indicator shows the status of the Handsfree. Once Handsfree is activated, it can be deactivated by picking up the handset or by pressing the Release (RLS) key.

Handsfree operates as if an off-hook operation had been performed. For example, when the telephone is idle, pressing the Handsfree/Mute key turns on the integrated Handsfree and selects a DN (depending on line selection as assigned through COS), allowing the user to make a call. When a call comes into an M2317 and the set is ringing, pressing the Handsfree/Mute key turns on the Handsfree and allows the user to answer the incoming (ringing) call (depending on COS-assigned line selection) without picking up the handset.

The M2317 provides independent volume adjustments for Handsfree, handset, and alerting tone volumes (on-hook dialing and buzz). For detailed adjusting information, refer to the *M2317 user guide* (P0744260).

LCD indicators

LCD indicators support the following four key/LCD states:

Function	LCD state
idle	off
active	on (steady)
ringing	flash (60 Hz)
hold	fast flash (120 Hz)

The following figures show the M2317 key layout and the different telephone states that can be displayed on the M2317 screen.

Figure 17
M2317 telephone—key identification

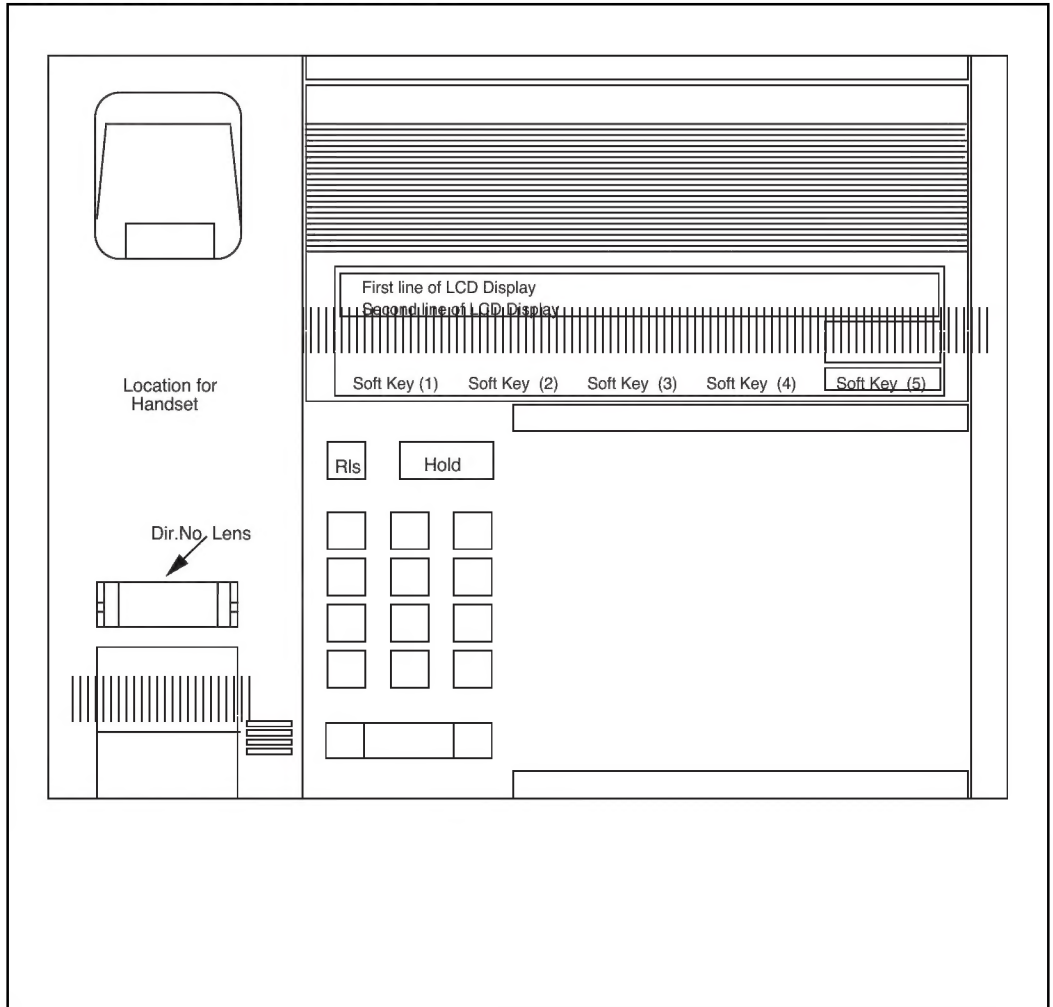


Figure 18
M2317 screen display—available idle state features

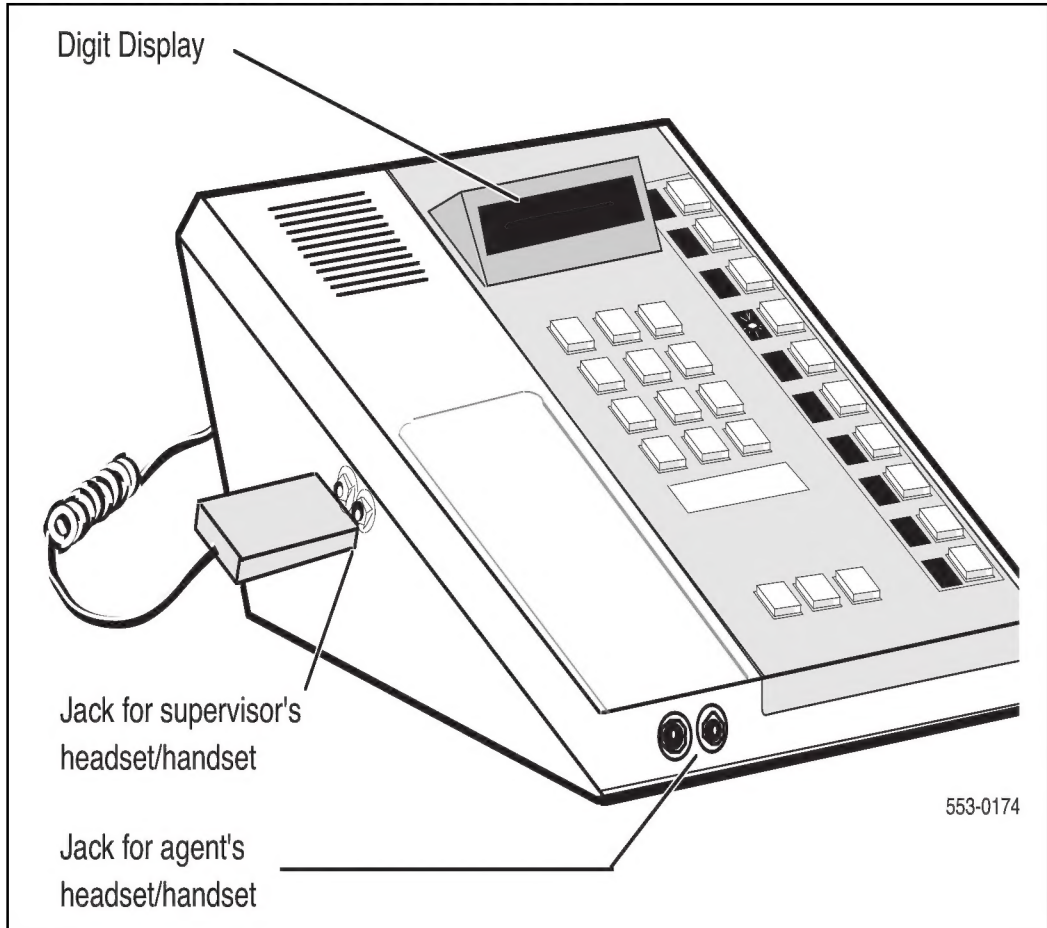


Figure 19
M2317 screen display—dial tone state

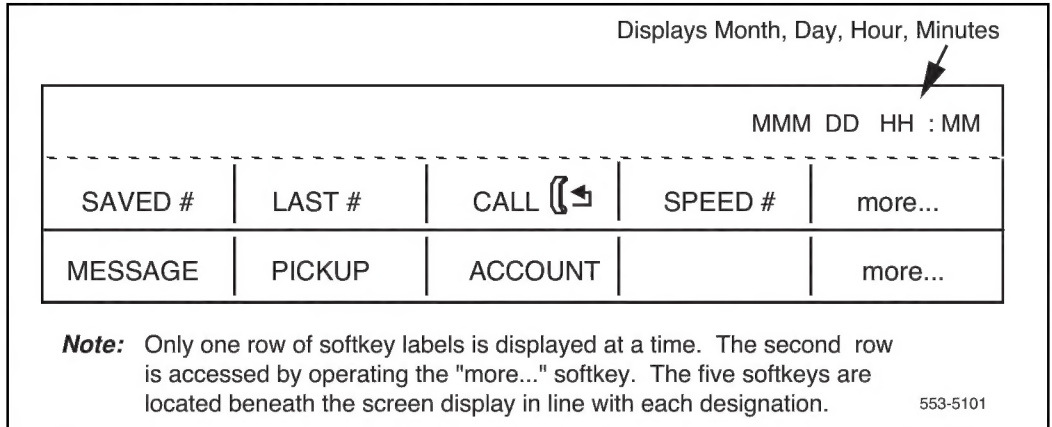


Figure 20
M2317 screen display—dialing state

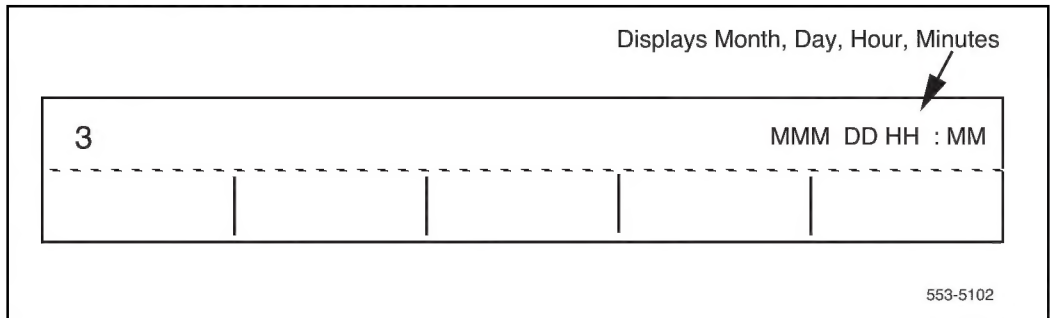


Figure 21
M2317 screen display—ringback state

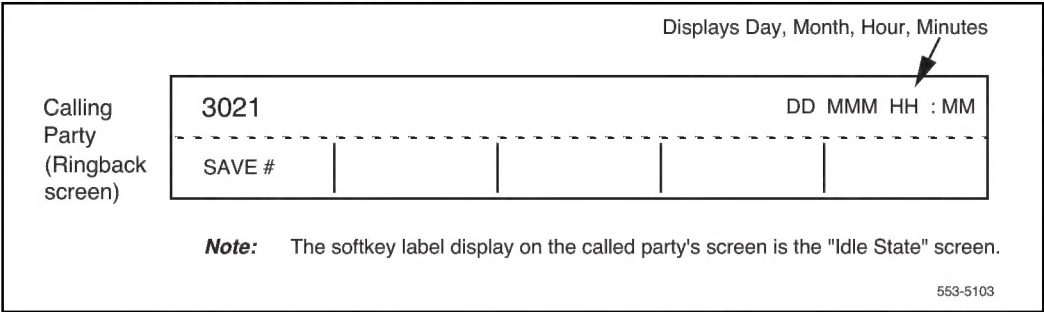
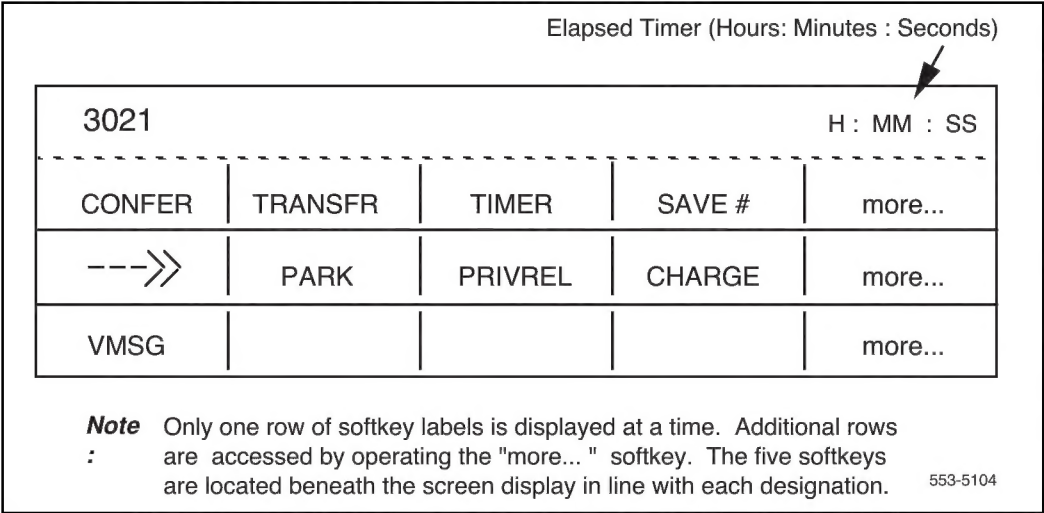


Figure 22
M2317 screen display—available established state features



Not all the features listed in Table 10 are necessarily provided for each customer. Check only those features that are enabled in accordance with the work order.

The -->> symbol display is associated with the Call Party Name Display (CPND) feature. CPND is only available with software X11 release 10 or later and must be enabled before it can be accessed.

Table 10
M2317 states and associated softkeys (Part 1 of 3)

Screen state	State	Softkey display
Idle	On-hook, voice or data	Saved#, LAST#, CANCL  --->, more..., HELD#, FORWARD, CHECK  TIMER, more..., RLSDATA, DATA, SPEED
Dialtone	Ready to transmit dialed digits (voice)	Saved#, LAST#, CALL  SPEED#, more..., MESSAGE, PICKUP, ACCOUNT, more...
Intercom dialtone	Ready to transmit dialed digits for an intercom call (voice)	PICKUP
Dialing	Transmitting dialed digits	no softkeys shown
Private Line dialing	Transmitting dialed digits on a private line (voice)	SAVED#, LAST#
Busy	Called party off-hook (voice)	RINGAGN, SAVE#
Reorder	Called party is unavailable (voice)	no softkeys shown
Ringback	Called party is ringing (voice)	SAVE#
ERWT call back	Initial set of ESN routes not available. Set gets Expensive Route Warning Tone (voice).	RINGAGN, SAVE#

Table 10
M2317 states and associated softkeys (Part 2 of 3)

Screen state	State	Softkey display
Established	Voice connection made	CONFER, TRANSFR, TIMER, SAVE#, more..., —>>, PARK, PRIVREL, CHARGE, more..., MESSAGE, more...
Intercom established	Connection made with an intercom group (voice)	CONFER, TRANSFR, TIMER
Private Line established	Connection made with a private line (voice)	CONFER, TRANSFR, TIMER
Voice Call/Group Call established	Connection made using a voice key or group call key (voice)	no softkeys shown
Conference/Transfer dialtone	Special dialtone (voice)	SAVED#, LAST#, CALL  SPEED, ACCOUNT
Conference/Transfer dialing	After special dialtone is heard, dialing the call (voice)	no softkeys shown
Conference/Transfer busy	After special dialtone is received, called party is off-hook (voice)	RINGAGN, SAVE#
Conference/Transfer reorder	After special dialtone is received, called party is unavailable (voice)	no softkeys shown
Transfer ringback	Used xfer feature, and the called party is ringing (voice)	CONNECT, SAVE#
Conference ringback	Used conf feature, and the called party is ringing (voice)	SAVE#
Consultation	The third party (consulting party called by xfer/conf feature) has answered the call (voice)	CONNECT, SWAP
Consultation Hold	The user is talking to the original party and the consulting party is on hold (voice)	CONNECT, SWAP
Established Hold	Call held by other party (voice)	no softkeys shown

Table 10
M2317 states and associated softkeys (Part 3 of 3)

Screen state	State	Softkey display
User status	Leave telset msg for set's status (voice)	no softkeys shown
Display	The user has operated the feature key "DSP" to display the speed/system speed call numbers (voice or data)	SPEED#, EXIT
Program	User has operated a feature key that requires user-input such as Auto Dial or Controlled Class of Service (COS)	no softkeys shown
Data call initiation	User pressed data DN key to make a data call (data)	CALL  , SPEED#, SAVED#, LAST#
Data call dialing	Transmitting dialed digits (data)	no softkeys shown
Data call busy	Called party off-hook (data)	RINGAGN, SAVE#
Data call reorder	Called party is unavailable (data)	no softkeys shown
Data call ringback	Called party is ringing (data)	SAVE#
Data call ERWT call back	Initial set of routes not available. Set gets Expensive Route Warning Tone (ERWT).	RINGAGN, SAVE#
Data call established	Connection made (data)	SAVE#

Asynchronous Data Option

See “Data options” on page 99 for more information on ADO requirements.

Firmware features

Firmware is chip-dependent and cannot be changed or altered on site. As a general rule, all firmware is on ROM microchips. Firmware is built into the M2317 telephone and into the Meridian 1 system.

The following functions are performed by firmware in the M2317 digital telephone:

- Predial
- Last Number Redial
- Saved Number
- Redial Saved Number
- Timer
- Time and Date
- Call Processing

Software requirements

The M2317 Telephone is available on X11 release 9 and later software.

All information related to the programmable keys must be downloaded into the M2317 RAM memory through the DLC or ISDLC. Downloading to the telephone is performed when the system is loaded or when a telephone is enabled.

Softkeys are automatically defined for the telephone based on Class of Service (CLS), database, or package restrictions. Softkeys work only in conjunction with the LCD display screen.

Table 11 lists the data features supported by the M2317 firmware.

Table 11
M2317 data features

Data features	M2317	DTE Keyboard
Ring Again	X	X
Speed Call	X	X
System Speed Call	X	X
Display		X
Call Forward	X	
Call Transfer (Note 1)		X
Autodial	X	X
Last Number Redial	X	
Save Number	X	
Redial Saved Number	X	
Note 1: Manual modem pooling using keyboard dialing requires only call transfer to be defined.		
Note 2: The Data DN must always be assigned to feature key 10.		

Specifications

This section lists the specifications required for the M2317 telephone.

Safety considerations

The following safety procedures should be followed.

Shock and fire hazards

For protection against electrical shock, energy hazards, or fire hazards, the telephone meets the following specifications:

CSA, C22.2 No. 0.7—M1985

UL 1459, relevant sections

Overvoltage protection

The M2317 telephone meets the specifications detailed by CSA, C22.2 No.7, paragraph 6.9.3.

Environmental considerations

The following environmental procedures should be followed.

Temperature and humidity

Operating state:

Temperature range	0° to 50° C (32° to 122°F) 0° to 40° C (32° to 104°F) with Data Option
Relative humidity	5% to 95% from 4° to 29°C (39° to 84° F) noncondensing 5% to 34% from 29.5° to 49°C (85° to 120°F) noncondensing

Storage:

Temperature range	–20° to 70° C (–4° to 158° F)
Relative humidity	5% to 95% from –20° to 29°C (–4° to 84°F) noncondensing 5% to 15% from 29.5°C to 66°C (85° to 150°F)

Dimensions and weight

The M2317 digital telephone has the following dimensions:

depth	226.5 mm (9 in)
width	272.0 mm (10.1 in)
height (front)	27.5 mm (1.1 in)
height (rear)	73.5 mm (2.9 in)

Excluding the power supply and the NT1F09AC Asynchronous Data Option board, the M2317 weighs approximately 1.4 Kg (3 lb). With the Data Option installed, the telephone, excluding power supply and data cable, weighs approximately 1.56 Kg (3.5 lb).

Line engineering

The M2317 digital telephones operate to their full potential through twisted pair wiring on transmission lines selected by the rules given in *Digital telephone line engineering* (553-2201-180). The maximum permissible loop length is 1067 m (3500 ft.) of 22 or 24 AWG or 760 m (2500 ft.) of 26 AWG standard twisted wire with no bridge taps or load coils.

The 1067 m (3500 ft.) loop length requires the use of a Digital Line Card (DLC) or an Integrated Services Digital Line Card (ISDLC) QPC578, vintage C or later.

Power requirements

The M2317 digital telephone uses loop power for all circuits requiring +10 V. To satisfy the power requirements for those circuits on a maximum loop, as defined in *Digital telephone line engineering* (553-2201-180), 60mA of 13.5 V dc must be available at the telephone. The line card must have compatible voltage and source resistance to meet these requirements.

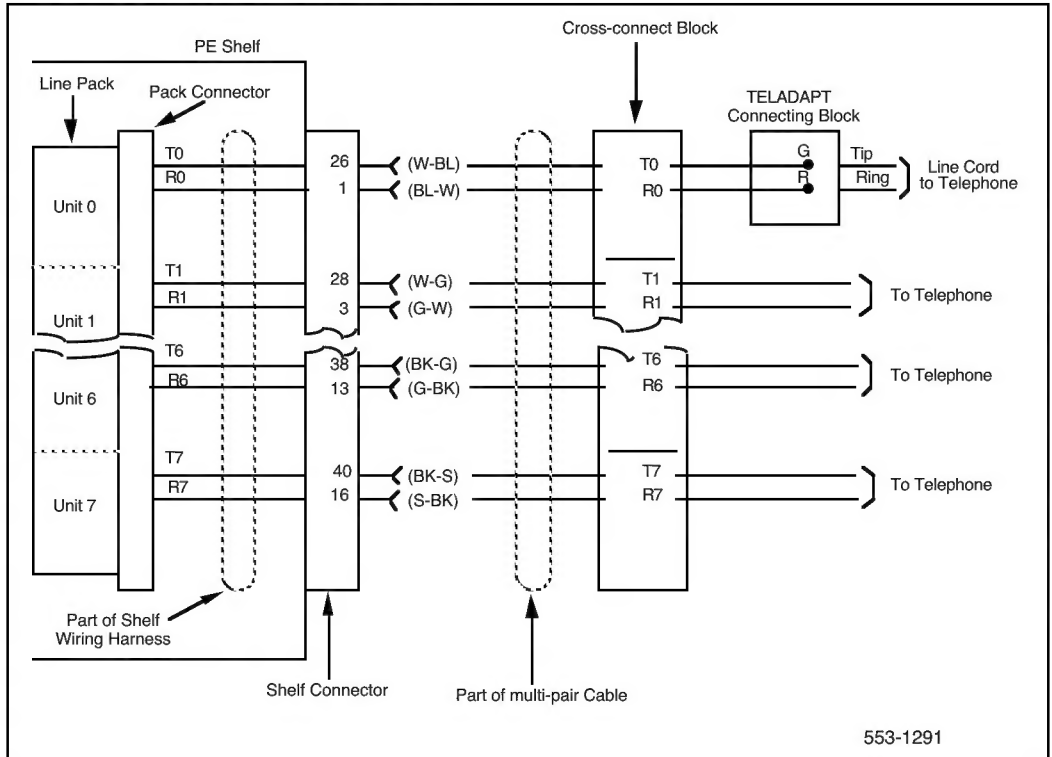
Logic and other circuitry requiring +5 V is powered from an external, regulated +5 V dc supply when the data option is not installed. The external power supply must meet the following specifications:

- Input: 95–129 V ac, 60 Hz
- Output: +5 V dc, + or –5%, 300 mA
10 mV maximum RMS ripple
- Cord: 2.5 m (8 ft.) of 20 AWG wire mating to a Switchcraft 722A connector
- Case: Wall mounted, CSA and UL approved.
Operational within 0°C (32°F) and 50°C (122°F) temperature limits
- Impedance: Greater than 10 M Ω to ground

The external power supply, in all cases where no Asynchronous Data Option is installed, is connected to the mating connector mounted in the rear of the M2317 telephone, covering the area where the RS-232-C interface connector would be located.

Note: If the Asynchronous Data Option is installed, an external, multi-output data power supply (refer to NPS50220-03L5) is required. See “Data options” on page 99 for more information on ADO requirements.

Figure 23
M2317 telephone cross-connections



Ordering information

This section provides ordering information for the M2317 telephone. Refer to the Northern Telecom price book or contact your Northern Telecom representative for specific ordering codes.

If the M2317 telephone fails to function properly, or if mechanical breakage occurs, do not attempt to make repairs in the field. Return the unit to the manufacturer.

Note: The NT1F09AA Synchronous Data Option must be release 4 or higher and requires the use of the multi-output Data Power Supply (A0336823).